

## MEMORY REDUNDANCY WITH PROGRAMMABLE NON-VOLATILE CONTROL

### Abstract of the Disclosure

A redundancy scheme for a memory is disclosed that is programmable both before and after the memory device is packaged and/or installed in a system. This is preferably accomplished by using programmable non-volatile memory elements to control the replacement circuitry. Because the programmable memory elements are non-volatile, the desired replacement configuration is not lost during shipping, or if power is lost in a system. By allowing post-packaging replacement of defective memory elements, the overall yield of the device may be improved. By allowing post system installation replacement of defective memory elements, the reliability of many systems may be improved. In addition, the disclosed redundancy scheme allows two or more defective memory elements from different rows or columns to be replaced with memory elements from a single redundant row or column. This provides added flexibility during the replacement process.

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